

Maternal and Child Health

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** Introduction

- ❖ Maternal and child health (MCH): includes all efforts to promote health and prevent illness in mothers and their children. Health includes physical, mental and social well-being.
- ❖ The goal of these efforts is a healthy child, delivered and cared for by a healthy mother.
- ❖ The targets for MCH are all women in their **reproductive age groups (15 - 44 years of age)**, children, school age population and adolescents.

- ❖ Mothers and children **make up over 2/3** of the whole population.
- ❖ **The development of mothers, infants and young children may be divided into several periods.**

**** The Maternal Periods**

1-Pre-pregnant:

All non pregnant time during the mother's reproductive years.

2- Pregnant :

From conception until delivery.

3-Labor and delivery:

That portion of the pregnant period from the beginning of true labor until the delivery of all products of conception including the placenta.

4- Puerperium (Postpartum)

The six weeks following delivery.

**** Periods Related To Infants and Children**

1- Fetal:

From conception until delivery.

2- Neonatal:

From birth through 28 days of life.

3-Perinatal (Antenatal) :

From the 20th week after conception through the first 28 days after birth, thus combining the late fetal and neonatal periods.

4- Infancy:

From birth to the first birthday.

5- Preschool:

From the first birthday to the 5th birthday.

Maternal Health

** Adolescent (Tennage) pregnancy

- ❑ It is the pregnancy occurring in girls of age of 19 or younger.
- ❑ According to WHO: (September 2014)
 - About 16 million girls aged 15 to 19 and 1 million girls under 15 give birth every year—most in low- and middle-income countries.
 - Complications during pregnancy and child birth are the second cause of death for 15-19 year-old girls globally.
 - Every year, 3 million girls aged 15 to 19 undergo unsafe abortions.
 - Babies born to adolescent mothers face a substantially higher risk of dying than those born to women aged 20 to 24.

**** Maternal Mortality**

Maternal mortality is defined as: the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause acutely related to or aggravated by pregnancy or its management, but not from accidental causes.

Maternal mortality represents one of the widest health gaps between developed and non developing nations, with 99 % of all maternal deaths occurring in developing countries.



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True magnitude of stillbirths and maternal and neonatal deaths underreported

Counting and reviewing every birth and death is key to preventing future tragedies

News release

16 AUGUST 2016 | GENEVA - The day of birth is potentially the most dangerous time for mothers and babies. Every year, worldwide, [REDACTED] women die during pregnancy and childbirth, [REDACTED] babies die during the first 28 days of life and [REDACTED] babies are stillborn.



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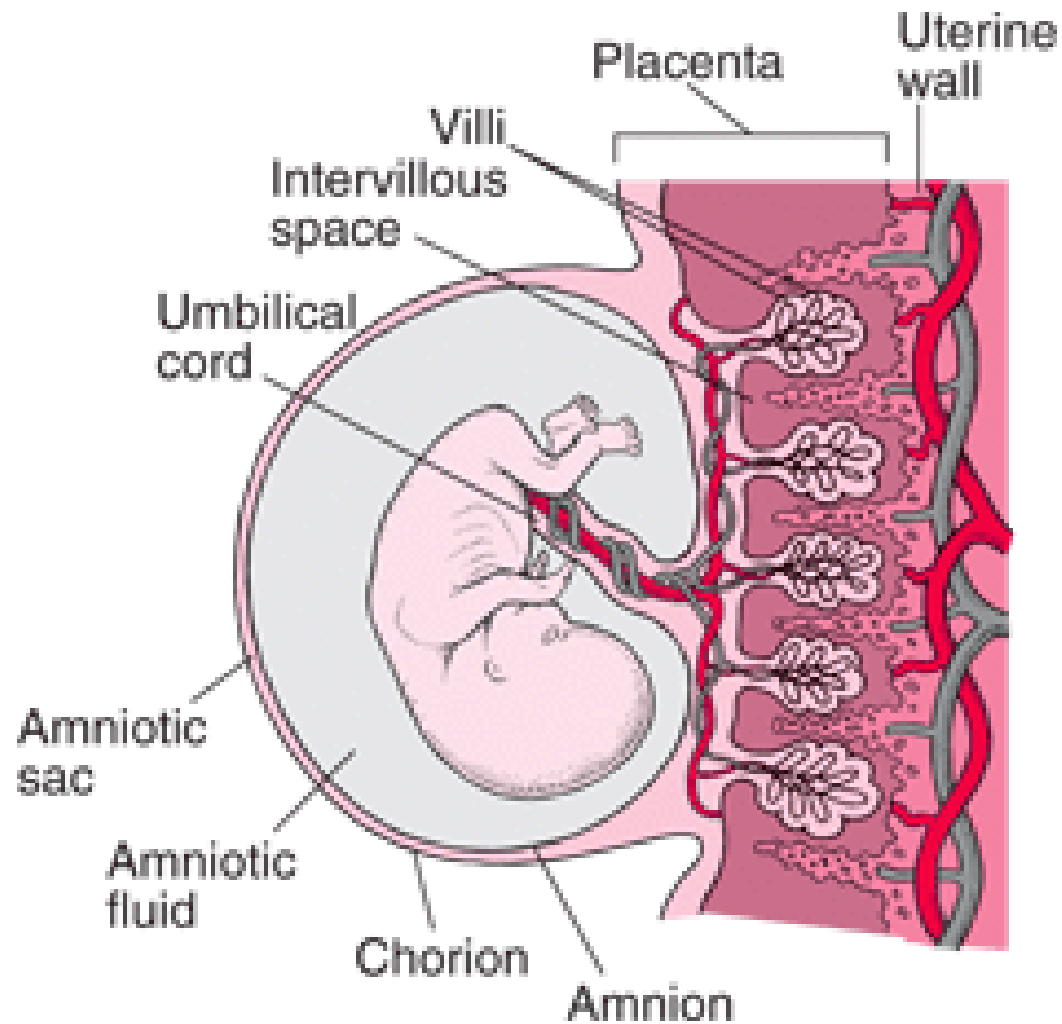
16 AUGUST 2016 | GENEVA - The day of birth is potentially the most dangerous time for mothers and babies. Every year, worldwide, 303 000 women die during pregnancy and childbirth, 2.7 million babies die during the first 28 days of life and 2.6 million babies are stillborn.

Major Causes of Maternal Mortality

There are six major causes of maternal mortality, especially in the developing countries.

- 1- Obstructed labour.
- 2- Infection.
- 3- Hypertensive disorders of pregnancy (eclampsia).
- 4- Abortion.
- 5- Haemorrhage.
- 6- Anemia.

Placenta & Umbilical Cord



1- Infection

Due to the use of **non sterile techniques** at the time of delivery and to the lack of **normal resistance that occurs in chronically malnourished women.**

Examples include:

- Puerperal Sepsis.
- Malaria.
- Hepatitis.
- Sexually transmitted diseases and pelvic infections.
- AIDS.

2- Obstructed Labour

- Obstructed labor occurs when the presenting part of the fetus cannot progress into the birth canal, despite strong uterine contractions.
- Teenage pregnancy is a serious risk factor and mostly occurs in first delivery. Thus it is mainly the problem of early adolescent pregnancy.
- Obstructed labour can result not only in maternal death, but also in fetal death due to infection, birth injury, or asphyxia.

3- Hypertensive Disorders of Pregnancy

- These include **eclampsia** and **pre-eclampsia**, which are occurring only during pregnancy (after 20 weeks pregnancy) as a result of pregnancy induced hypertension.
- **Early stage pre-eclampsia**, characterized by high blood pressure, generalized edema (swelling), and excess protein in the urine (albuminuria). It can lead to eclampsia if untreated.
- **Eclampsia** is characterized by very high blood pressure, convulsions, and possible cerebral haemorrhage.

4- Abortion

- **Abortion is:** termination of pregnancy before the fetus is capable of extra uterine life.
- Depending on the cause abortion is classified into:
 1. **Spontaneous abortion (commonly known as miscarriage)** which is **unprovoked** termination of pregnancy
 2. **Induced abortion** due to **deliberate** interference. It is the leading cause of maternal mortality ranging from 15-50% in different countries
 3. **Therapeutic abortion**, which is performed exclusively for medical reasons specially when
 - a) **Danger to mother's health** is high if pregnancy continues.
 - b) **If fetus is threatened** with congenital and genetic abnormalities.

5- Haemorrhage

It can occur during pregnancy, delivery and postpartum period.

❖ During pregnancy:

- At 1st trimester due to **abortion**.
- At 2nd trimester due to abnormal **placental location** and **preterm labour**.
- At 3rd trimester due to abnormal **placental location**, **premature separation of placenta**, and **premature labour**.

❖ During delivery due to:

- Uterine or placental **bleeding**.
- **Traumatic damage** to vagina or cervix.

❖ During postpartum period due to:

- **Non-involution** of the uterus.
- From **retained placenta** (partial or complete).

6- Anemia

- Anemia is very prevalent among women in developing countries, as a result of iron and/or folate deficiency and of malaria and other parasitic diseases.
- Anemia contributes to maternal mortality by making women more susceptible to infection and less able to withstand infection or the effects of haemorrhage.
- Effective prevention depends ultimately on lifelong nutrition of girls and women.
- It can be treated simply and effectively during pregnancy using routine iron and folate supplementation.

- To prevent maternal mortality, care must be provided to expectant mother.
- This care includes:

I- Antenatal Care Service.

II- Labor & Delivery Care Service.

III- Postnatal Care Service.

I- Antenatal Care Service (ANC)

- Antenatal (prenatal) Care (ANC): is the care given to pregnant mothers that they have safe pregnancy and healthy baby. It refers to the regular medical and nursing care recommended for women during pregnancy.
- It also helps in minimizing complications of pregnancy, labour, post partum and neonatal periods.
- The availability of routine antenatal care has played a part in reducing maternal death rates and miscarriages as well as birth defects, low birth weight, and other preventable health problems.

**** At the first antenatal visit:**

- 1- A complete medical history is taken,
- 2- A complete physical examination is performed.
- 3- Laboratory examinations should be carried out, which include:

A. Blood-typing of the mother.

B. Hemoglobin test,

C. Urine analysis.

D. Immunization against tetanus.

F. TORCH test (Toxoplasmosis, Rubella, Cytomegalovirus, Herpes simplex, HIV). **This test preferred to be done before planning to get pregnant.**

**** Subsequently, visits are usually:**

- 1-Monthly through the first 6 months of pregnancy.
- 2- Twice monthly through the 7th and 8th months.
- 3- Weekly during the ninth month of pregnancy.

**** At each visit, a brief physical examination is done which includes:**

- 1 -Assessment of fetal growth
- 2- Determination of blood pressure.

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**** Health and Nutrition Education During ANC:**

Health and nutrition education during ANC must focus on:

- Pregnancy: fetal movement, labour and common problems.
- Diet and Nutrition.
- Avoiding alcohol, tobacco, and **drugs (specially in the first trimester)**.
- Personal hygiene.
- Delivery preparation.
- Labour signs.
- Newborn care.
- Traditional beliefs and practices.

II- Labor & Delivery Care Service

- Labour and delivery **last less than 24 hours**, the most critical time for the health and survival of both the mother and the infant.
- The risk of the mother at this time include:
 - 1- Hemorrhage,
 - 2- Complications of anesthesia,
 - 3- The introduction of infectious agents into her uterus.
- Hospital delivery has the advantage of having all facilities to handle sudden problems.
- The most elementary knowledge in delivery care is the 3 c's:
 - Clean hands.
 - Clean delivery service.
 - Clean cutting of the cord.

III- Postnatal Care Service

- Postnatal is the period beginning immediately after the birth of a child and extending for about six weeks. Another terms would be postpartum or puerperium period.
- The puerperium is a period of important physiologic readjustment of the mother (hormones & uterus size).
- Great care should be taken to avoid puerperal infection. The latter is caused by a variety of organisms, the most important of which is beta hemolytic *Streptococci*; these may be derived from endogenous source or exogenous source. If unchecked, may lead to peritonitis and general septicemia.

Child Health

**** Perinatal Mortality**

- **Perinatal mortality:** is the death of fetus or neonate in the perinatal period.
- **Stillbirth (fetal death):** a death of fetus after the 24th week of gestation and before labor.
- **Neonatal mortality:** death in the first month of life.

** Causes of perinatal mortality:

- 1- Preterm birth.
- 2- Low birth weight.
- 3- Congenital abnormalities.

- **Preterm birth:** is birth before a gestational age of 37 complete weeks (normal pregnancy is from 37 – 42 weeks).
- Causes of preterm birth:
 - Maternal age – higher preterm birth rates found among the youngest (< 19years) and oldest mothers (> 40 years).
 - Multiple births – nearly 60% of twins and about 93% of triplets and higher-order births are preterm.
- **Low birth weight:** is defined as a live born infant of less than **2500 grams**, regardless of gestational age.

**** Nutritional Diseases in infancy**

Anemia:

It may be caused by:

- 1-The mother has an iron deficiency anemia during the later period of pregnancy (3rd trimester).
- 2-Deficiency in protein of biological value from which hemoglobin molecules are made.


Treatment:

If adequately provided with iron in his intrauterine life, will not suffer any serious anemia (iron intake during pregnancy).

**** Vitamin deficiencies**

Diseases	Features
1- <u>Avitaminosis A</u> (Vitamin A deficiency)	Xerophthalmia and keratomalacia among artificially-fed babies in the first year of life. Treated by: Vit. A concentrates orally.
2- <u>Infantile Beriberi</u> (Severe thiamine or Vit B1 deficiency)	Classified into 3 syndromes a) Acute cardiac: Cardiac enlargement & pulmonary edema. b) Aphonic : (loss of voice). c) Pseudomeningeal : Resembles encephalitis.
3- <u>Rickets</u> (vitamin D deficiency)	Softening and weakening of bones that can be developed due to lack of exposure to the sun, poor vit. D diet, prolonged diarrhea.
4- <u>Pellagra</u> (deficiency of nicotinic acid, other B vit , especially B3)	Dermatitis Diarrhea Dementia

** Protein-Calorie malnutrition in early childhood

Disease	Causes	Features
<u>1- Kwashiorkor</u> 	Occurs due to a diet: a) Lacking in proteins. b) Bulky in carbohydrates.	<ul style="list-style-type: none">● Oedema.● Growth failure.● Muscle wasting.● Psychomotor changes.● Other features include; light-coloured skin, moon-face, anemia.
<u>2- Nutritional Marasmus</u> <u>(Balanced Starvation)</u>	Due to diet very low in both protein and calories.	<ul style="list-style-type: none">● Growth retardation.● Severe wasting of muscles and subcutaneous fat.

Lecture summary

- ✓ Definition of maternal and child health.
- ✓ Maternal and child periods.
- ✓ Causes of maternal mortality.
- ✓ Care must be provided to expectant mother.
- ✓ Causes of perinatal mortality.
- ✓ Nutritional Diseases in infancy.

Thank you!!



Questions??